

REMARKS

Claims 1-57 are pending. Claims 58-67 have been cancelled without prejudice. Claims 1, 4, 5, and 27-55 have been amended. Support for the amendments can be found throughout the specification, for example, at pages 24-30. No new matter has been added.

Election/Restrictions

Applicants affirm the election of claims 1-57, directed to a liquid stereolithography resin. Applicant further affirms the election of the species of Example 1 of the specification. The Examiner has indicated that claims 7-57 are withdrawn from consideration, as being drawn to a non-elected species. Applicants respectfully traverse the withdrawal of claims 7-57. Specifically, of claims 7-57, the following claims read on the elected species: 7, 8, 10-12, 15-23, 25-28, 31, and 56-57. Because the above-listed claims read on the elected species, Applicants respectfully request that claims 7-57 be properly considered.

Objections to the specification

The specification has been amended to correct a clerical error identified by the Examiner.

Rejections under 35 U.S.C. § 102(b)

Claims 1-6 have been rejected for anticipation under 35 U.S.C. § 102(b). Specifically, the Examiner has rejected claims 1-3 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,076,974 to Modrek et al. ("Modrek"). Claims 1-6 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,849,459 to Hagiwara et al. ("Hagiwara"). Claims 1-2 were rejected as being anticipated by U.S. Patent No. 6,017,973 to Tamura et al. ("Tamura"). The Examiner has rejected claims 1-6 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,080,450 to Cantor ("Cantor"). Finally, claims 1-2 were rejected for anticipation by U.S. Patent No. 3,954,584 to Miyata et al. ("Miyata"). Claims 2-6 depend from independent claim 1. See the Office Action at pages 7-10.

Applicants have discovered a liquid stereolithography resin including a first urethane acrylate oligomer, a first acrylate monomer, and a polymerization modifier. The first urethane

acrylate oligomer is CN964, CN963, CN966, CN990, or CN973. None of Modrek, Hagiwara, Tamura, Cantor or Miyata describe a composition including a first urethane acrylate oligomer, a first acrylate monomer, and a polymerization modifier, where the first urethane acrylate oligomer is CN964, CN963, CN966, CN990, or CN973. For at least this reason, claim 1 and the claims that depend from it are patentable over each of Modrek, Hagiwara, Tamura, Cantor and Miyata.

Applicants respectfully request that the rejection under 35 U.S.C. § 102(b) be reconsidered and withdrawn.

Rejections under 35 U.S.C. § 112, second paragraph

The Examiner has rejected claims 4-5 under 35 U.S.C. § 112, second paragraph for indefiniteness. Specifically, the Examiner indicates that the inclusion of trademarks or trade names renders the scope of claims 4-5 uncertain. Applicants have amended claims 4-5 accordingly, by replacing trade names with generic names of the corresponding products. Likewise, claims 26-55 have been amended to use chemical nomenclature well known in the art, where possible. For example, among other amendments to claim 26, the term "LA-32" has been deleted and the chemical name, "2-(2'-hydroxy-5'-methylphenyl)benzotriazole," has been inserted to replace it. No new matter has been introduced.

The term "IRGACURE" has been deleted from claim 4 without prejudice. Applicants are expressly not disclaiming photoinitiators sold under the IRGACURE name from the subject matter of claim 4. Indeed, Applicants believe that claim 4 reads on photoinitiators sold under the IRGACURE name. For example, IRGACURE 184 (sold by Ciba Specialty Chemicals) is 1-hydroxy-cyclohexylphenylketone, as recited in claim 4. Claims 4-5 and 26-55 have been amended solely in order to comply with 35 U.S.C. § 112, second paragraph.

For some claim terms (such as "CN964", see, for example, claim 27), however, no detailed chemical description is readily available. The product sold as SARTOMER CN964 is described by the manufacturer as "an aliphatic polyester based urethane diacrylate oligomer." A material safety data sheet (MSDS) for SARTOMER CN964 describes the product component as "aliphatic urethane acrylate" and under the heading for Chemical Abstract Service (CAS) number, the MSDS states, "proprietary." For reference, MSDSs for products including CN964,

Applicant: Alma L. Coats et al.
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CN963, CN966, CN990 and CN973 are attached as Appendix A. The terms CN964, CN963, CN966, CN990, and CN973 each uniquely identifies a chemical composition. A person of ordinary skill in the art would understand what is claimed when the claim is read in light of the specification. See *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986).

Applicants respectfully request that the rejection under 35 U.S.C. § 112, second paragraph be reconsidered and withdrawn.

CONCLUSION

Applicants ask that all claims be allowed. Please apply any deposits or credits to Deposit Account No. 19-4293.

Respectfully submitted,

12-9-04

Date


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Sartomer Company

Material Safety Data Sheet

Product: CN964
MSDS ID: S-000754

Revised Date: 07-29-2003
Replaces Date: 03-06-2000

01. GENERAL INFORMATION

Sartomer Company, Inc.
Oaklands Corporate Center
502 Thomas Jones Way
Exton, Pennsylvania 19341

Emergency phone numbers:
800/424-9300 (CHEMTREC)
610/692-8401 (Sartomer Co., Inc.)
Product information:
610/363-4100

GENERIC NAME
Urethane acrylate resin

DOT PROPER SHIPPING NAME	UN/NA NUMBER
N/AP	N/AP
DOT HAZARD CLASS	
Not regulated	

02. SUMMARY OF HAZARDS

CAUTION

PHYSICAL HAZARDS:	Unstable (reactive) upon depletion of inhibitor
ACUTE HEALTH EFFECTS: (SHORT-TERM)	Slight eye irritant Slight skin irritant Suspect skin sensitization hazard Suspect slight respiratory tract irritation hazard Not expected to be a skin absorption hazard Not expected to be an ingestion hazard
CHRONIC HEALTH EFFECTS: (LONG-TERM)	No chronic health effects information is available for this product.

03. COMPONENTS

COMPONENT NAME	CAS NUMBER	% COMPOSITION (BY WT.)
Aliphatic urethane acrylate	Proprietary	AP 100

04. PHYSICAL AND CHEMICAL DATA

BOILING POINT N/DA	pH N/DA
FREEZING POINT N/DA	DRY POINT N/DA
SPECIFIC GRAVITY (H ₂ O=1 at 39.2F) AP 1.1 at 60C/140F	VOLATILE CHARACTERISTICS Negligible
VISCOSITY UNITS, TEMP. (Brookfield) AP 12,000-20,000 cps at 60C/140F	SOLUBILITY IN WATER Negligible

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VAPOR PRESSURE

N/DA

VAPOR SP GR (AIR=1 AT 60 - 90F)

N/DA

STABILITY

Stable

HAZARDOUS POLYMERIZATION

May occur

APPEARANCE AND ODOR

Clear viscous liquid with pungent odor

CONDITIONS AND MATERIALS TO AVOID

High temperatures, localized heat sources (ie, drum or band heaters), oxidizing conditions, freezing conditions, direct sunlight, ultraviolet radiation, inert gas blanketing;

Strong oxidizers, strong reducers, free radical initiators, inert gases, oxygen scavengers

HAZARDOUS DECOMPOSITION PRODUCTS

Acrid smoke-fumes/carbon monoxide/carbon dioxide/nitrogen oxides and perhaps other toxic vapors may be released during a fire involving this product.

05. OCCUPATIONAL EXPOSURE LIMITS

SUBSTANCE	SOURCE	DATE	TYPE	VALUE	TIME
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A PEL or TLV has not been established

06. FIRE AND EXPLOSION

FLASH POINT METHOD=(PMCC)
GT 93C/200F

AUTOIGNITION TEMP. METHOD=
N/DA

FLAMMABLE LIMITS (% VOLUME IN AIR)
LOWER: N/DA UPPER: N/DA

FIRE AND EXPLOSION HAZARDS

High temperatures, inhibitor depletion, accidental impurities, or exposure to radiation or oxidizers may cause spontaneous polymerizing reaction generating heat/pressure. Closed containers may rupture or explode during runaway polymerization.

EXTINGUISHING MEDIA

Dry chemical

CO₂

Foam

Use water spray/water fog for cooling

SPECIAL FIREFIGHTING PROCEDURES

Do not enter fire area without proper protection. See Section 4 - decomposition products possible. Fight fire from safe distance/protected location. Heat/impurities may increase temperature/build pressure/rupture closed containers, spreading fire, increasing risk of burns/injuries. Water may be ineffective in firefighting due to low solubility. Use water

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Product: CN964
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spray/fog for cooling. Pressure relief system may plug with solids, increasing risk of overpressure. Notify authorities if liquid enters sewer/public waters.

07. HEALTH HAZARDS

ROUTES OF EXPOSURE

INHALATION

No significant signs or symptoms indicative of any adverse health hazard are expected to occur at standard conditions due to the low volatility of this material. However, aerosols, or vapors which may be generated at elevated processing temperatures, may cause respiratory tract irritation. Symptoms of irritation may include coughing, mucous production and shortness of breath.

EYE CONTACT -- PRIMARY ROUTE

May cause minor eye irritation. Symptoms may include excessive tearing, blinking and redness.

SKIN ABSORPTION -- PRIMARY ROUTE

Although no appropriate human or animal health effects data are known to exist, this material is not expected to be a health hazard by skin absorption.

SKIN IRRITATION -- PRIMARY ROUTE

May cause minor skin irritation.

Symptoms of irritation may include a slight localized redness or rash and swelling.

Although no appropriate human or animal health effects data is known to exist, this material may cause an allergic skin reaction (sensitization) in susceptible individuals upon repeated exposure.

INGESTION

Although no appropriate human or animal health effects data is known to exist, this material is not expected to be an ingestion hazard.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

No additional medical information found.

08. PROTECTIVE EQUIPMENT / CONTROL MEASURES

RESPIRATORY PROTECTION

If this material is handled at elevated temperature or under mist forming conditions, NIOSH/MSHA approved respiratory protection equipment should be used.

EYE PROTECTION

Eye protection such as chemical splash goggles and/or face shield must be worn when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapor. Contact lenses should not be worn.

SKIN PROTECTION

Sartomer Company

Material Safety Data Sheet

Product: CN964
MSDS ID: S-000754

Revised Date: 07-29-2003
Replaces Date: 03-06-2000

Depending on the conditions of use, protective gloves, apron, boots, head and face protection should be worn. This equipment should be cleaned thoroughly after each use.

ENGINEERING CONTROLS

If handling results in aerosol or vapor generation, local exhaust ventilation is recommended.

OTHER HYGIENIC PRACTICES

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

OTHER WORK PRACTICES

Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing/wash thoroughly before reuse. Shower after work using plenty of soap and water.

09. EMERGENCY AND FIRST AID

INHALATION

If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.

EYE CONTACT

In case of eye contact, immediately rinse with clean water for 20-30 minutes. Retract eyelids often. Obtain emergency medical attention if pain, blinking, tears or redness persist.

SKIN CONTACT

Remove contaminated clothing as needed. Wash skin thoroughly with mild soap/water. Flush with lukewarm water for 15 minutes. If sticky, use waterless cleaner first.

INGESTION

Ingestion unlikely. However, if ingested, obtain emergency medical attention.

EMERGENCY MEDICAL TREATMENT PROCEDURES

Treat symptomatically.

10. SPILL AND DISPOSAL

PRECAUTIONS IF MATERIAL IS SPILLED OR RELEASED

Spilled or released material may polymerize and release heat/gases. Extinguish all ignition sources and ventilate area. Wear protective equipment during clean-up. Dike and recover large spill. Soak up small spill with inert solids (such as vermiculite, clay) and sweep/shovel into vented disposal container. Wash spill area with a strong detergent and water solution; rinse with water but minimize water use during clean-up. For spills on water, contain, minimize dispersion and collect. Dispose/report per regulatory requirements.

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Product: CN964
MSDS ID: S-000754

Revised Date: 07-29-2003
Replaces Date: 03-06-2000

WASTE DISPOSAL METHODS

Non-contaminated, properly inhibited product is not a RCRA hazardous waste. However, contaminated product/soil/water may be RCRA/OSHA hazardous waste due to potential for internal heat generation (see 40 CFR 261 and 29 CFR 1910). It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste. Comply with all applicable federal, state and local regulations. Use registered transporters. Disposal options include landfilling solids at permitted sites; fuel blending or incinerating liquids. Assure emissions comply with applicable regulations. Dilute aqueous waste may biodegrade; avoid overloading/poisoning plant biomass. Assure effluent complies with applicable regulations.

11. ADDITIONAL PRECAUTIONS

HANDLING AND STORAGE PROCEDURES

Wear appropriate protective equipment when handling this material (See Section 8 of MSDS). Some acrylic oligomers and oligomer blends are viscous or extremely viscous and may require heating to facilitate handling. To facilitate product transfer from original container, product may be heated to 80C/176F for not more than 24 hours. Do NOT use localized heat sources such as band heaters to heat/melt product. Do NOT use steam. Hot boxes or hot rooms are recommended for heating/melting material. The hot box or hot room should be set at a maximum temperature of 80C/176F. Do not overheat--this may compromise product quality and/or result in an uncontrolled hazardous polymerization. If product freezes, heat as indicated above and mix gently to redistribute the inhibitor. Product should be consumed in its entirety after heating/melting--avoid multiple "re-heats" which may affect product quality or result in product degradation. Product is packaged with inhibitor(s). Unless inhibited, product can polymerize, raising temperature and pressure possibly rupturing container. Check inhibitor content periodically, adding to bulk material if needed. In addition, the product's inhibitor(s) require the presence of dissolved oxygen. Maintain, at a minimum, the original headspace in the product container and do not blanket or mix with oxygen-free gas as it renders inhibitor ineffective. Ensure air space (oxygen) is present during product heating/melting.

Store product indoors at temperatures greater than product's freezing point (or greater than 0C/32F if no freezing point available) and below 38C/100F. Avoid prolonged (longer than shelf-life) storage temperatures above 38C/100F. Store in tightly closed containers in a properly vented storage area away from: heat, sparks, open flame, strong oxidizers, radiation, and other initiators. Prevent contamination by foreign materials. Prevent moisture contact. Use only non-sparking tools and limit storage time. Unless specified elsewhere, shelf-life is 6 months from receipt.

DECONTAMINATION PROCEDURES

Follow standard plant procedures or supervisor's instructions for decontamination operations.

12. LABEL INFORMATION

USE STATEMENT

Sartomer Company

Material Safety Data Sheet

Product: CN964
MSDS ID: S-000754

Revised Date: 07-29-2003
Replaces Date: 03-06-2000

FOR INDUSTRIAL USE ONLY

SIGNAL WORD

CAUTION

PHYSICAL HAZARDS

UNSTABLE (REACTIVE) UPON LOSS OF INHIBITOR

HEALTH HAZARDS

MAY CAUSE ALLERGIC SKIN REACTION

PRECAUTIONARY STATEMENTS

HAZARDOUS POLYMERIZATION MAY OCCUR UPON DEPLETION OF INHIBITOR.

DO NOT HANDLE NEAR HEAT, SPARKS, OR OPEN FLAME.

AVOID CONTACT WITH EYES, SKIN AND CLOTHING.

AVOID BREATHING VAPORS/MISTS.

USE ONLY WITH ADEQUATE VENTILATION/PERSONAL PROTECTION.

KEEP CONTAINER CLOSED WHEN NOT IN USE.

WASH THOROUGHLY AFTER HANDLING.

BEFORE USING PRODUCT, READ MATERIAL SAFETY DATA SHEET (MSDS).

13. SUPPLEMENT

NPCA - HMIS RATING

Health	1
Flammability	1
Reactivity	2
Personal protection**	D

**Respiratory protection may be needed depending on conditions of use. See Section 8 of MSDS.

REGULATORY INFORMATION

TSCA STATUS

TSCA status: All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

INTERNATIONAL INVENTORY STATUS

Canada (DSL)	on NDSL
Europe (EINECS)	polymer
Japan (ENCS)	on inventory
Korea (ECL)	on inventory
Australia (AICS)	on inventory

This material contains an inhibitor (HQ, MEHQ, etc.) at <1%. The type and amount meet product specifications. Contact a company representative for exact concentrations and details on inhibitor level maintenance.

*Note - qualifiers and codes used in this MSDS

EQ = Equal; AP = Approximately; LT = Less Than; GT = Greater Than;

TR = Trace; UK = Unknown; N/AP = Not Applicable; N/P = No Applicable Information Found; N/DA = No Data Available

14. DISCLAIMERS

Sartomer Company

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Product: CN964
MSDS ID: S-000754

Revised Date: 07-29-2003
Replaces Date: 03-06-2000

Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product itself. The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable. This MSDS has been prepared in accordance with the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Sartomer Company

Material Safety Data Sheet

Product: CN963E75
MSDS ID: S-000055

Revised Date: 08-07-2003
Replaces Date: 08-05-2003

01. GENERAL INFORMATION

Sartomer Company, Inc.
Oaklands Corporate Center
502 Thomas Jones Way
Exton, Pennsylvania 19341

Emergency phone numbers:
800/424-9300 (CHEMTREC)
610/692-8401 (Sartomer Co., Inc.)
Product information:
610/363-4100

GENERIC NAME
Resin/Monomer Blend
DOT PROPER SHIPPING NAME
N/AP
DOT HAZARD CLASS
Not regulated

UN/NA NUMBER
N/AP

02. SUMMARY OF HAZARDS

WARNING

PHYSICAL HAZARDS: Unstable (reactive) upon depletion of inhibitor

ACUTE HEALTH EFFECTS: Suspect eye irritation hazard
(SHORT-TERM) Suspect slight skin irritation hazard
Suspect skin sensitization hazard
Suspect respiratory tract irritation hazard
Not expected to be an ingestion hazard
May be absorbed through the skin

CHRONIC HEALTH EFFECTS: No appropriate human or animal chronic health effects data is known to exist for this material or either of its components.

03. COMPONENTS

COMPONENT NAME	CAS NUMBER	% COMPOSITION (BY WT.)
Aliphatic Urethane Acrylate	Proprietary	AP 20-90
Ethoxylated Trimethylolpropane Triacrylate Esters	28961-43-5	AP 10-80

04. PHYSICAL AND CHEMICAL DATA

BOILING POINT N/DA	pH AP 6.8 to 7.2
FREEZING POINT N/DA	DRY POINT N/AP
SPECIFIC GRAVITY (H ₂ O=1 AT 39.2F)	VOLATILE CHARACTERISTICS

Sartomer Company

Material Safety Data Sheet

Product: CN963E75
MSDS ID: S-000055

Revised Date: 08-07-2003
Replaces Date: 08-05-2003

1.09-1.12 at 25C/77F	Negligible
VISCOSITY UNITS, TEMP. (Brookfield)	SOLUBILITY IN WATER
AP 4000 at 60C/140F	Negligible
VAPOR PRESSURE	STABILITY
N/DA	Stable
VAPOR SP GR (AIR=1 AT 60 - 90F)	HAZARDOUS POLYMERIZATION
N/DA	May occur

APPEARANCE AND ODOR
Clear, light yellow viscous liquid with pungent odor

CONDITIONS AND MATERIALS TO AVOID

High temperatures, localized heat sources (ie, drum or band heaters), oxidizing conditions, freezing conditions, direct sunlight, ultraviolet radiation, inert gas blanketing;

Strong oxidizers, strong reducers, free radical initiators, inert gases, oxygen scavengers

HAZARDOUS DECOMPOSITION PRODUCTS

Acrid smoke-fumes/carbon monoxide/carbon dioxide/nitrogen oxides and perhaps other toxic vapors may be released during a fire involving this product.

05. OCCUPATIONAL EXPOSURE LIMITS

SUBSTANCE	SOURCE	DATE	TYPE	VALUE	TIME
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A PEL or TLV has not been established

06. FIRE AND EXPLOSION

FLASH POINT	METHOD=(Estimated)	AUTOIGNITION TEMP.	METHOD=
GT 93C/200F		N/DA	

FLAMMABLE LIMITS (% VOLUME IN AIR)
LOWER: N/DA UPPER: N/DA

FIRE AND EXPLOSION HAZARDS

High temperatures, inhibitor depletion, accidental impurities, or exposure to radiation or oxidizers may cause spontaneous polymerizing reaction generating heat/pressure. Closed containers may rupture or explode during runaway polymerization.

EXTINGUISHING MEDIA
Dry chemical
CO₂
Water spray
Foam
Water fog

SPECIAL FIREFIGHTING PROCEDURES

Do not enter fire area without proper protection. See Section 4 - decomposition products possible. Fight fire from safe distance/protected location. Heat/impurities may increase temperature/build pressure/rupture

Sartomer Company

Material Safety Data Sheet

Product: CN963E75
MSDS ID: S-000055

Revised Date: 08-07-2003
Replaces Date: 08-05-2003

closed containers, spreading fire, increasing risk of burns/injuries. Water may be ineffective in firefighting due to low solubility. Use water spray/fog for cooling. Pressure relief system may plug with solids, increasing risk of overpressure. Notify authorities if liquid enters sewer/public waters.

07. HEALTH HAZARDS

ROUTES OF EXPOSURE

INHALATION

No significant signs or symptoms indicative of any adverse health hazard are expected to occur at standard conditions due to the low volatility of this material. However, aerosols, or vapors which may be generated at elevated processing temperatures, may cause respiratory tract irritation. Symptoms of irritation may include coughing, mucous production and shortness of breath.

EYE CONTACT -- PRIMARY ROUTE

Although no appropriate human or animal health effects data are known to exist, this material is expected to cause eye irritation.

May cause moderate irritation with symptoms including burning sensation, tearing, redness or swelling.

SKIN ABSORPTION

Although no appropriate human or animal health effects data are known to exist, this material is expected to be a health hazard by skin absorption.

SKIN IRRITATION -- PRIMARY ROUTE

Although no appropriate human or animal health effects data are known to exist, this material is expected to be a slight skin irritant.

Symptoms may include a slight localized redness or rash and swelling.

Although no appropriate human or animal health effects data is known to exist, this material may cause an allergic skin reaction (sensitization) in susceptible individuals upon repeated exposure.

INGESTION

No significant signs or symptoms indicative of any adverse health hazard are expected to occur as a result of ingestion.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

This material or its emissions may defat skin, cause contact dermatitis, or otherwise aggravate existing skin disease.

08. PROTECTIVE EQUIPMENT / CONTROL MEASURES

RESPIRATORY PROTECTION

If this material is handled at elevated temperature or under mist forming conditions, NIOSH/MSHA approved respiratory protection equipment should be used.

EYE PROTECTION

Sartomer Company

Material Safety Data Sheet

Product: CN963E75
MSDS ID: S-000055

Revised Date: 08-07-2003
Replaces Date: 08-05-2003

Eye protection such as chemical splash goggles and/or face shield must be worn when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapor. Contact lenses should not be worn.

SKIN PROTECTION

Depending on the conditions of use, protective gloves, apron, boots, head and face protection should be worn. This equipment should be cleaned thoroughly after each use.

ENGINEERING CONTROLS

If handling results in aerosol or vapor generation, local exhaust ventilation is recommended.

OTHER HYGIENIC PRACTICES

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

OTHER WORK PRACTICES

Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing/wash thoroughly before reuse. Shower after work using plenty of soap and water.

09. EMERGENCY AND FIRST AID

INHALATION

If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.

EYE CONTACT

In case of eye contact, immediately rinse with clean water for 20-30 minutes. Retract eyelids often. Obtain emergency medical attention if pain, blinking, tears or redness persist.

SKIN CONTACT

Remove contaminated clothing as needed. Wash skin thoroughly with mild soap/water. Flush with lukewarm water for 15 minutes. If sticky, use waterless cleaner first.

INGESTION

Ingestion unlikely. However, if ingested, obtain emergency medical attention.

EMERGENCY MEDICAL TREATMENT PROCEDURES

Continue to rinse eye with clean water for 20-30 minutes, retracting eyelids often. Contact ophthalmologist immediately.

10. SPILL AND DISPOSAL

PRECAUTIONS IF MATERIAL IS SPILLED OR RELEASED

Spilled or released material may polymerize and release heat/gases. Extinguish all ignition sources and ventilate area. Wear protective equipment during clean-up. Dike and recover large spill. Soak up small

Sartomer Company

Material Safety Data Sheet

Product: CN963E75
MSDS ID: S-000055

Revised Date: 08-07-2003
Replaces Date: 08-05-2003

spill with inert solids (such as vermiculite, clay) and sweep/shovel into vented disposal container. Wash spill area with a strong detergent and water solution; rinse with water but minimize water use during clean-up. For spills on water, contain, minimize dispersion and collect. Dispose/report per regulatory requirements.

WASTE DISPOSAL METHODS

Non-contaminated, properly inhibited product is not a RCRA hazardous waste. However, contaminated product/soil/water may be RCRA/OSHA hazardous waste due to potential for internal heat generation (see 40 CFR 261 and 29 CFR 1910). It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste. Comply with all applicable federal, state and local regulations. Use registered transporters. Disposal options include landfilling solids at permitted sites; fuel blending or incinerating liquids. Assure emissions comply with applicable regulations. Dilute aqueous waste may biodegrade; avoid overloading/poisoning plant biomass. Assure effluent complies with applicable regulations.

11. ADDITIONAL PRECAUTIONS

HANDLING AND STORAGE PROCEDURES

Wear appropriate protective equipment when handling this material (See Section 8 of MSDS). Some acrylic oligomers and oligomer blends are viscous or extremely viscous and may require heating to facilitate handling. To facilitate product transfer from original container, product may be heated to 80C/176F for not more than 24 hours. Do NOT use localized heat sources such as band heaters to heat/melt product. Do NOT use steam. Hot boxes or hot rooms are recommended for heating/melting material. The hot box or hot room should be set at a maximum temperature of 80C/176F. Do not overheat--this may compromise product quality and/or result in an uncontrolled hazardous polymerization. If product freezes, heat as indicated above and mix gently to redistribute the inhibitor. Product should be consumed in its entirety after heating/melting--avoid multiple "re-heats" which may affect product quality or result in product degradation. Product is packaged with inhibitor(s). Unless inhibited, product can polymerize, raising temperature and pressure possibly rupturing container. Check inhibitor content periodically, adding to bulk material if needed. In addition, the product's inhibitor(s) require the presence of dissolved oxygen. Maintain, at a minimum, the original headspace in the product container and do not blanket or mix with oxygen-free gas as it renders inhibitor ineffective. Ensure air space (oxygen) is present during product heating/melting.

Store product indoors at temperatures greater than product's freezing point (or greater than 0C/32F if no freezing point available) and below 38C/100F. Avoid prolonged (longer than shelf-life) storage temperatures above 38C/100F. Store in tightly closed containers in a properly vented storage area away from: heat, sparks, open flame, strong oxidizers, radiation, and other initiators. Prevent contamination by foreign materials. Prevent moisture contact. Use only non-sparking tools and limit storage time. Unless specified elsewhere, shelf-life is 6 months from receipt.

Sartomer Company

Material Safety Data Sheet

Product: CN963E75
MSDS ID: S-000055

Revised Date: 08-07-2003
Replaces Date: 08-05-2003

DECONTAMINATION PROCEDURES

Follow standard plant procedures or supervisor's instructions for decontamination operations.

12. LABEL INFORMATION

USE STATEMENT

FOR INDUSTRIAL USE ONLY

SIGNAL WORD

WARNING

PHYSICAL HAZARDS

UNSTABLE (REACTIVE) UPON LOSS OF INHIBITOR

HEALTH HAZARDS

MAY CAUSE EYE IRRITATION

MAY CAUSE ALLERGIC SKIN REACTION

PRECAUTIONARY MEASURES

HAZARDOUS POLYMERIZATION MAY OCCUR UPON DEPLETION OF INHIBITOR.

DO NOT HANDLE NEAR HEAT, SPARKS, OR OPEN FLAME.

AVOID CONTACT WITH EYES, SKIN AND CLOTHING.

AVOID BREATHING VAPORS/MISTS.

AVOID OXIDIZING AGENTS.

USE ONLY WITH ADEQUATE VENTILATION/PERSONAL PROTECTION.

KEEP CONTAINER CLOSED WHEN NOT IN USE.

WASH THOROUGHLY AFTER HANDLING.

BEFORE USING PRODUCT, READ MATERIAL SAFETY DATA SHEET (MSDS).

13. SUPPLEMENT

NPCA - HMIS RATING

Health	2
Flammability	1
Reactivity	2
Personal protection**	D

**Respiratory protection may be necessary depending on conditions of use.
See Section 8 of MSDS for respiratory protection guidelines.

REGULATORY INFORMATION

TSCA STATUS:

TSCA status: All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

CALIFORNIA PROPOSITION 65:

California Proposition 65 Information: This product contains, or may contain, trace quantities of a substance(s) known to the state of California to cause cancer and/or reproductive toxicity.

Sartomer Company

Material Safety Data Sheet

Product: CN963E75
MSDS ID: S-000055

Revised Date: 08-07-2003
Replaces Date: 08-05-2003

This material contains an inhibitor (HQ, MEHQ, etc.) at <1%. The type and amount meet product specifications. Contact a company representative for exact concentrations and details on inhibitor level maintenance.

*Note - qualifiers and codes used in this MSDS

EQ = Equal; AP = Approximately; LT = Less Than; GT = Greater Than;
TR = Trace; UK = Unknown; N/AP = Not Applicable; N/P = No Applicable
Information Found; N/DA = No Data Available

14. DISCLAIMERS

Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product itself. The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable. This MSDS has been prepared in accordance with the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Sartomer Company

Material Safety Data Sheet

Product: CN966J75
MSDS ID: S-000056

Revised Date: 08-07-2003
Replaces Date: 08-05-2003

01. GENERAL INFORMATION

Sartomer Company, Inc.
Oaklands Corporate Center
502 Thomas Jones Way
Exton, Pennsylvania 19341

Emergency phone numbers:
800/424-9300 (CHEMTREC)
610/692-8401 (Sartomer Co., Inc.)
Product information:
610/363-4100

GENERIC NAME
Acrylic Oligomer/Monomer Blend

DOT PROPER SHIPPING NAME UN/NA NUMBER
N/AP N/AP
DOT HAZARD CLASS
Not regulated

02. SUMMARY OF HAZARDS

WARNING

PHYSICAL HAZARDS: Unstable (reactive) upon depletion of inhibitor

ACUTE HEALTH EFFECTS: Suspect eye irritation hazard
(SHORT-TERM) Suspect skin irritation hazard
Suspect skin sensitization hazard
Suspect respiratory tract irritation hazard
Suspect slight skin absorption hazard
Suspect slight ingestion hazard

CHRONIC HEALTH EFFECTS: No chronic health effects information is known to exist for this product or either component.
(LONG-TERM)

03. COMPONENTS

COMPONENT NAME	CAS NUMBER	% COMPOSITION BY (WT.)
Aliphatic Urethane Acrylate	Proprietary	AP 75-85
Isobornyl Acrylate (IBOA)	5888-33-5	AP 15-25

04. PHYSICAL AND CHEMICAL DATA

BOILING POINT	PH
IBOA: 275C/527F	N/DA
FREEZING POINT	DRY POINT
IBOA: 5C/41F	N/DA
SPECIFIC GRAVITY (H ₂ O=1 at 39.2F)	VOLATILE CHARACTERISTICS

Sartomer Company

Material Safety Data Sheet

Product: CN966J75
MSDS ID: S-000056

Revised Date: 08-07-2003
Replaces Date: 08-05-2003

AP 1.09 at 60C/140F	Negligible
VISCOSITY UNITS, TEMP. (Brookfield)	SOLUBILITY IN WATER
AP 3600 cps at 60C/140F	Negligible
VAPOR PRESSURE	STABILITY
N/DA	Stable
VAPOR SP GR (AIR=1 at 60 - 90F)	HAZARDOUS POLYMERIZATION
N/DA	May occur

APPEARANCE AND ODOR
Viscous liquid with pungent odor

CONDITIONS AND MATERIALS TO AVOID

High temperatures, localized heat sources (ie, drum or band heaters), oxidizing conditions, freezing conditions, direct sunlight, ultraviolet radiation, inert gas blanketing;

Strong oxidizers, strong reducers, free radical initiators, inert gases, oxygen scavengers

HAZARDOUS DECOMPOSITION PRODUCTS

Acrid smoke-fumes/carbon monoxide/carbon dioxide/nitrogen oxides and perhaps other toxic vapors may be released during a fire involving this product.

05. OCCUPATIONAL EXPOSURE LIMITS

SUBSTANCE	SOURCE	DATE	TYPE	VALUE	TIME
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A PEL or TLV has not been established for this product

06. FIRE AND EXPLOSION

FLASH POINT: METHOD=(PMCC)
GT 93C/200F

AUTOIGNITION TEMP.: METHOD=
N/DA

FLAMMABLE LIMITS (% VOLUME IN AIR)
LOWER: N/DA UPPER: N/DA

FIRE AND EXPLOSION HAZARDS

High temperatures, inhibitor depletion, accidental impurities, or exposure to radiation or oxidizers may cause spontaneous polymerizing reaction generating heat/pressure. Closed containers may rupture or explode during runaway polymerization.

EXTINGUISHING MEDIA
Dry chemical
CO₂
Foam
Use water spray/water fog for cooling

SPECIAL FIREFIGHTING PROCEDURES

Do not enter fire area without proper protection. See Section 4 - decomposition products possible. Fight fire from safe distance/protected location. Heat/impurities may increase temperature/build pressure/rupture closed containers, spreading fire, increasing risk of burns/injuries. Water

Sartomer Company

Material Safety Data Sheet

Product: CN966J75
MSDS ID: S-000056

Revised Date: 08-07-2003
Replaces Date: 08-05-2003

may be ineffective in firefighting due to low solubility. Use water spray/fog for cooling. Pressure relief system may plug with solids, increasing risk of overpressure. Notify authorities if liquid enters sewer/public waters.

07. HEALTH HAZARDS

ROUTES OF EXPOSURE

INHALATION

No significant signs or symptoms indicative of any adverse health hazard are expected to occur at standard conditions due to the low volatility of this material. However, aerosols, or vapors which may be generated at elevated processing temperatures, may cause respiratory tract irritation. Symptoms of irritation may include coughing, mucous production and shortness of breath.

EYE CONTACT -- PRIMARY ROUTE

Although no appropriate human or animal health effects data are known to exist, this material is expected to cause eye irritation.

May cause moderate irritation with symptoms including burning sensation, tearing, redness or swelling.

SKIN ABSORPTION -- PRIMARY ROUTE

Although no appropriate human or animal health effects data are known to exist, this material is expected to be a slight skin absorption hazard.

SKIN IRRITATION -- PRIMARY ROUTE

Although no appropriate human or animal health effects data are known to exist, this material is expected to be a skin irritant.

Symptoms may include localized redness or rash and swelling of the affected area. Symptoms may be delayed. A more severe skin response may occur after prolonged contact with this material.

Although no appropriate human or animal health effects data is known to exist, this material may cause an allergic skin reaction (sensitization) in susceptible individuals upon repeated exposure.

INGESTION

Although no appropriate human or animal health effects data are known to exist, this material is expected to be a slight ingestion hazard.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

This material or its emissions may induce an allergic or sensitization reaction and thereby aggravate systemic disease.

08. PROTECTIVE EQUIPMENT / CONTROL MEASURES

RESPIRATORY PROTECTION

If this material is handled at elevated temperature or under mist forming conditions, NIOSH/MSHA approved respiratory protection equipment should be used.

EYE PROTECTION

Sartomer Company

Material Safety Data Sheet

Product: CN966J75
MSDS ID: S-000056

Revised Date: 08-07-2003
Replaces Date: 08-05-2003

Eye protection such as chemical splash goggles and/or face shield must be worn when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapor. Contact lenses should not be worn.

SKIN PROTECTION

When skin contact is possible, protective clothing including gloves, apron, sleeves, boots, head and face protection should be worn. This equipment must be cleaned thoroughly after each use.

ENGINEERING CONTROLS

If handling results in aerosol or vapor generation, local exhaust ventilation is recommended.

OTHER HYGIENIC PRACTICES

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

OTHER WORK PRACTICES

Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing/wash thoroughly before reuse. Shower after work using plenty of soap and water.

09. EMERGENCY AND FIRST AID

INHALATION

If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.

EYE CONTACT

In case of eye contact, immediately rinse with clean water for 20-30 minutes. Retract eyelids often. Obtain emergency medical attention.

SKIN CONTACT

Immediately remove contaminated clothing. Wash skin thoroughly with mild soap/water. Flush w/lukewarm water for 15 minutes. If sticky, use waterless cleaner first. Seek medical attention if ill effect or irritation develops.

INGESTION

If large quantity swallowed, give lukewarm water (pint) if victim completely conscious/alert. Do not induce vomiting/risk of damage to lungs exceeds poisoning risk. Obtain emergency medical attention.

EMERGENCY MEDICAL TREATMENT PROCEDURES

Treat symptomatically.

10. SPILL AND DISPOSAL

PRECAUTIONS IF MATERIAL IS SPILLED OR RELEASED

Spilled or released material may polymerize and release heat/gases. Extinguish all ignition sources and ventilate area. Wear protective equipment during clean-up. Dike and recover large spill. Soak up small spill with inert solids (such as vermiculite, clay) and sweep/shovel into

Sartomer Company

Material Safety Data Sheet

Product: CN966J75
MSDS ID: S-000056

Revised Date: 08-07-2003
Replaces Date: 08-05-2003

vented disposal container. Wash spill area with a strong detergent and water solution; rinse with water but minimize water use during clean-up. For spills on water, contain, minimize dispersion and collect. Dispose/report per regulatory requirements.

WASTE DISPOSAL METHODS

Non-contaminated, properly inhibited product is not a RCRA hazardous waste. However, contaminated product/soil/water may be RCRA/OSHA hazardous waste due to potential for internal heat generation (see 40 CFR 261 and 29 CFR 1910). It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste. Comply with all applicable federal, state and local regulations. Use registered transporters. Disposal options include landfilling solids at permitted sites; fuel blending or incinerating liquids. Assure emissions comply with applicable regulations. Dilute aqueous waste may biodegrade; avoid overloading/poisoning plant biomass. Assure effluent complies with applicable regulations.

11. ADDITIONAL PRECAUTIONS

HANDLING AND STORAGE PROCEDURES

Wear appropriate protective equipment when handling this material (See Section 8 of MSDS). Some acrylic oligomers and oligomer blends are viscous or extremely viscous and may require heating to facilitate handling. To facilitate product transfer from original container, product may be heated to 80C/176F for not more than 24 hours. Do NOT use localized heat sources such as band heaters to heat/melt product. Do NOT use steam. Hot boxes or hot rooms are recommended for heating/melting material. The hot box or hot room should be set at a maximum temperature of 80C/176F. Do not overheat--this may compromise product quality and/or result in an uncontrolled hazardous polymerization. If product freezes, heat as indicated above and mix gently to redistribute the inhibitor. Product should be consumed in its entirety after heating/melting--avoid multiple "re-heats" which may affect product quality or result in product degradation. Product is packaged with inhibitor(s). Unless inhibited, product can polymerize, raising temperature and pressure possibly rupturing container. Check inhibitor content periodically, adding to bulk material if needed. In addition, the product's inhibitor(s) require the presence of dissolved oxygen. Maintain, at a minimum, the original headspace in the product container and do not blanket or mix with oxygen-free gas as it renders inhibitor ineffective. Ensure air space (oxygen) is present during product heating/melting.

Store product indoors at temperatures greater than product's freezing point (or greater than 0C/32F if no freezing point available) and below 38C/100F. Avoid prolonged (longer than shelf-life) storage temperatures above 38C/100F. Store in tightly closed containers in a properly vented storage area away from: heat, sparks, open flame, strong oxidizers, radiation, and other initiators. Prevent contamination by foreign materials. Prevent moisture contact. Use only non-sparking tools and limit storage time. Unless specified elsewhere, shelf-life is 6 months from receipt.

DECONTAMINATION PROCEDURES

Sartomer Company

Material Safety Data Sheet

Product: CN966J75
MSDS ID: S-000056

Revised Date: 08-07-2003
Replaces Date: 08-05-2003

Follow standard plant procedures or supervisor's instructions for decontamination operations.

12. LABEL INFORMATION

USE STATEMENT

FOR INDUSTRIAL USE ONLY

SIGNAL WORD

WARNING

PHYSICAL HAZARDS

UNSTABLE (REACTIVE) UPON LOSS OF INHIBITOR

HEALTH HAZARDS

MAY CAUSE EYE AND SKIN IRRITATION

MAY CAUSE ALLERGIC SKIN REACTION

PRECAUTIONARY MEASURES

DO NOT HANDLE NEAR HEAT, SPARKS, OR OPEN FLAME.

HAZARDOUS POLYMERIZATION MAY OCCUR UPON DEPLETION OF INHIBITOR.

AVOID OXIDIZING AGENTS.

AVOID CONTACT WITH EYES, SKIN, AND CLOTHING.

AVOID BREATHING VAPORS/AEROSOLS.

USE ONLY WITH ADEQUATE VENTILATION/PERSONAL PROTECTION.

WASH THOROUGHLY AFTER HANDLING.

KEEP CONTAINER CLOSED WHEN NOT IN USE.

BEFORE USING PRODUCT, READ MATERIAL SAFETY DATA SHEET.

13. SUPPLEMENT

NPCA HMIS RATING

Health 2

Flammability 1

Reactivity 2

Personal protection** D

**Respiratory protection may be necessary depending on conditions of use. See Section 8 of MSDS for additional information.

REGULATORY INFORMATION

TSCA STATUS

TSCA status: All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

CALIFORNIA PROPOSITION 65

California Proposition 65 Information: this product does not contain any substances known to the state of California to cause cancer and/or reproductive harm.

This material contains an inhibitor (HQ, MEHQ, etc.) at <1%. The type and amount meet product specifications. Contact a company representative for exact concentrations and details on inhibitor level maintenance.

*Note - qualifiers and codes used in this MSDS

Sartomer Company

Material Safety Data Sheet

Product: CN966J75
MSDS ID: S-000056

Revised Date: 08-07-2003
Replaces Date: 08-05-2003

EQ = Equal; AP = Approximately; LT = Less Than; GT = Greater Than;
TR = Trace; UK = Unknown; N/AP = Not Applicable; N/P = No Applicable
Information Found; N/DA = No Data Available

14. DISCLAIMERS

Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product itself. The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable. This MSDS has been prepared in accordance with the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Sartomer Company

Material Safety Data Sheet

Product: CN990
MSDS ID: S-000720

Revised Date: 07-29-2003
Replaces Date: 03-06-2000

01. GENERAL INFORMATION

Sartomer Company, Inc.
Oaklands Corporate Center
502 Thomas Jones Way
Exton, Pennsylvania 19341

Emergency phone numbers:
800/424-9300 (CHEMTREC)
610/692-8401 (Sartomer Co., Inc.)
Product information:
610/363-4100

GENERIC NAME

Acrylate Oligomers
DOT PROPER SHIPPING NAME
Not regulated
DOT HAZARD CLASS
N/AP

UN/NA NUMBER
N/AP

02. SUMMARY OF HAZARDS

WARNING

PHYSICAL HAZARDS: Unstable (reactive) upon depletion of inhibitor

ACUTE HEALTH EFFECTS:
(SHORT-TERM) Suspect slight eye irritation hazard
Suspect slight to moderate skin irritation hazard
Suspect skin sensitization hazard
Suspect slight respiratory tract irritation hazard
Not expected to be an ingestion hazard
Not expected to be a skin absorption hazard

CHRONIC HEALTH EFFECTS:
(LONG-TERM) No data are available on the chronic health effects of this product.

03. COMPONENTS

COMPONENT NAME	CAS NUMBER	% COMPOSITION (BY WT.)
Acrylate oligomers	Proprietary	AP 100

04. PHYSICAL AND CHEMICAL DATA

BOILING POINT	PH
N/DA	N/DA
FREEZING POINT	DRY POINT
N/DA	N/AP
SPECIFIC GRAVITY (H ₂ O=1 AT 39.2F)	VOLATILE CHARACTERISTICS
AP 1.07 at 25C/77F	Negligible
VISCOSITY UNITS, TEMP. (Brookfield)	SOLUBILITY IN WATER
AP 50,000-80,000 cps at 25C/77F	Negligible
VAPOR PRESSURE	STABILITY

Sartomer Company

Material Safety Data Sheet

Product: CN990
MSDS ID: S-000720

Revised Date: 07-29-2003
Replaces Date: 03-06-2000

AP <0.1 mm Hg at 20C/68F
VAPOR SP GR (AIR=1 AT 60 - 90F)
GT 1

Stable
HAZARDOUS POLYMERIZATION
May occur

APPEARANCE AND ODOR
Viscous, clear resin with very little odor

CONDITIONS AND MATERIALS TO AVOID

High temperatures, localized heat sources (ie, drum or band heaters), oxidizing conditions, freezing conditions, direct sunlight, ultraviolet radiation, inert gas blanketing;
Strong oxidizers, strong reducers, free radical initiators, inert gases, oxygen scavengers

HAZARDOUS DECOMPOSITION PRODUCTS

Incomplete combustion may produce carbon monoxide, carbon dioxide, nitrogen oxides and perhaps other toxic vapors.

05. OCCUPATIONAL EXPOSURE LIMITS

SUBSTANCE	SOURCE	DATE	TYPE	VALUE	TIME
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A PEL or TLV has not been established

06. FIRE AND EXPLOSION

FLASH POINT	METHOD=(Estimated)	AUTOIGNITION TEMP.	METHOD=
GT 93C/200F		N/DA	

FLAMMABLE LIMITS (% VOLUME IN AIR)
LOWER: N/DA UPPER: N/DA

FIRE AND EXPLOSION HAZARDS

High temperatures, inhibitor depletion, accidental impurities, or exposure to radiation or oxidizers may cause spontaneous polymerizing reaction generating heat/pressure. Closed containers may rupture or explode during runaway polymerization.

EXTINGUISHING MEDIA
Dry chemical
CO2
Water spray
Foam
Water fog

SPECIAL FIREFIGHTING PROCEDURES

Do not enter fire area without proper protection. See Section 4 - decomposition products possible. Fight fire from safe distance/protected location. Heat/impurities may increase temperature/build pressure/rupture closed containers, spreading fire, increasing risk of burns/injuries. Water may be ineffective in firefighting due to low solubility. Use water spray/fog for cooling. Pressure relief system may plug with solids,

Sartomer Company

Material Safety Data Sheet

Product: CN990
MSDS ID: S-000720

Revised Date: 07-29-2003
Replaces Date: 03-06-2000

increasing risk of overpressure. Notify authorities if liquid enters sewer/public waters.

07. HEALTH HAZARDS

ROUTES OF EXPOSURE

INHALATION

No significant signs or symptoms indicative of any adverse health hazard are expected to occur at standard conditions due to the low volatility of this material. However, aerosols, or vapors which may be generated at elevated processing temperatures, may cause respiratory tract irritation. Symptoms of irritation may include coughing, mucous production and shortness of breath.

EYE CONTACT -- PRIMARY ROUTE

Although no appropriate human or animal health effects data are known to exist, this material is expected to cause slight eye irritation.

Symptoms may include slight redness, irritation, excessive blinking or tearing.

SKIN ABSORPTION

Although no appropriate human or animal health effects data are known to exist, this material is not expected to be a health hazard by skin absorption.

SKIN IRRITATION -- PRIMARY ROUTE

Although no appropriate human or animal health effects data are known to exist, this material is expected to be a skin irritant.

Symptoms may include redness or rash, swelling, or blistering. Symptoms may be delayed. Prolonged contact may cause a more severe response such as burns. Although no appropriate human or animal health effects data is known to exist, this material may cause an allergic skin reaction (sensitization) in susceptible individuals upon repeated exposure.

INGESTION

Although no appropriate human or animal health effects data is known to exist, this material is not expected to be an ingestion hazard.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

No additional medical information found.

08. PROTECTIVE EQUIPMENT / CONTROL MEASURES

RESPIRATORY PROTECTION

If this material is handled at elevated temperature or under mist forming conditions, NIOSH/MSHA approved respiratory protection equipment should be used.

EYE PROTECTION

Eye protection such as chemical splash goggles and/or face shield must be worn when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapor. Contact lenses should not be worn.

Sartomer Company

Material Safety Data Sheet

Product: CN990
MSDS ID: S-000720

Revised Date: 07-29-2003
Replaces Date: 03-06-2000

SKIN PROTECTION

When skin contact is possible, protective clothing including gloves, apron, sleeves, boots, head and face protection should be worn. This equipment must be cleaned thoroughly after each use.

ENGINEERING CONTROLS

If handling results in aerosol or vapor generation, local exhaust ventilation is recommended.

OTHER HYGIENIC PRACTICES

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

OTHER WORK PRACTICES

Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing/wash thoroughly before reuse. Shower after work using plenty of soap and water.

09. EMERGENCY AND FIRST AID

INHALATION

If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.

EYE CONTACT

In case of eye contact, immediately rinse with clean water for 20-30 minutes. Retract eyelids often. Obtain emergency medical attention if pain, blinking, tears or redness persist.

SKIN CONTACT

Immediately remove contaminated clothing. Wash skin thoroughly with mild soap/water. Flush w/lukewarm water for 15 minutes. If sticky, use waterless cleaner first. Seek medical attention if ill effect or irritation develops.

INGESTION

Ingestion unlikely. However, if ingested, obtain emergency medical attention.

EMERGENCY MEDICAL TREATMENT PROCEDURES

Treat symptomatically.

10. SPILL AND DISPOSAL

PRECAUTIONS IF MATERIAL IS SPILLED OR RELEASED

Spilled or released material may polymerize and release heat/gases. Extinguish all ignition sources and ventilate area. Wear protective equipment during clean-up. Dike and recover large spill. Soak up small spill with inert solids (such as vermiculite, clay) and sweep/shovel into vented disposal container. Wash spill area with a strong detergent and water solution; rinse with water but minimize water use during clean-up. For spills on water, contain, minimize dispersion and collect. Dispose/report per regulatory requirements.

Sartomer Company

Material Safety Data Sheet

Product: CN990
MSDS ID: S-000720

Revised Date: 07-29-2003
Replaces Date: 03-06-2000

WASTE DISPOSAL METHODS

Non-contaminated, properly inhibited product is not a RCRA hazardous waste. However, contaminated product/soil/water may be RCRA/OSHA hazardous waste due to potential for internal heat generation (see 40 CFR 261 and 29 CFR 1910). It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste. Comply with all applicable federal, state and local regulations. Use registered transporters. Disposal options include landfilling solids at permitted sites; fuel blending or incinerating liquids. Assure emissions comply with applicable regulations. Dilute aqueous waste may biodegrade; avoid overloading/poisoning plant biomass. Assure effluent complies with applicable regulations.

11. ADDITIONAL PRECAUTIONS

HANDLING AND STORAGE PROCEDURES

Wear appropriate protective equipment when handling this material (See Section 8 of MSDS). Some acrylic oligomers and oligomer blends are viscous or extremely viscous and may require heating to facilitate handling. To facilitate product transfer from original container, product may be heated to 80C/176F for not more than 24 hours. Do NOT use localized heat sources such as band heaters to heat/melt product. Do NOT use steam. Hot boxes or hot rooms are recommended for heating/melting material. The hot box or hot room should be set at a maximum temperature of 80C/176F. Do not overheat--this may compromise product quality and/or result in an uncontrolled hazardous polymerization. If product freezes, heat as indicated above and mix gently to redistribute the inhibitor. Product should be consumed in its entirety after heating/melting--avoid multiple "re-heats" which may affect product quality or result in product degradation. Product is packaged with inhibitor(s). Unless inhibited, product can polymerize, raising temperature and pressure possibly rupturing container. Check inhibitor content periodically, adding to bulk material if needed. In addition, the product's inhibitor(s) require the presence of dissolved oxygen. Maintain, at a minimum, the original headspace in the product container and do not blanket or mix with oxygen-free gas as it renders inhibitor ineffective. Ensure air space (oxygen) is present during product heating/melting.

Store product indoors at temperatures greater than product's freezing point (or greater than 0C/32F if no freezing point available) and below 38C/100F. Avoid prolonged (longer than shelf-life) storage temperatures above 38C/100F. Store in tightly closed containers in a properly vented storage area away from: heat, sparks, open flame, strong oxidizers, radiation, and other initiators. Prevent contamination by foreign materials. Prevent moisture contact. Use only non-sparking tools and limit storage time. Unless specified elsewhere, shelf-life is 6 months from receipt.

DECONTAMINATION PROCEDURES

Follow standard plant procedures or supervisor's instructions for decontamination operations.

12. LABEL INFORMATION

Sartomer Company

Material Safety Data Sheet

Product: CN990
MSDS ID: S-000720

Revised Date: 07-29-2003
Replaces Date: 03-06-2000

USE STATEMENT

FOR INDUSTRIAL USE ONLY

SIGNAL WORD

WARNING

PHYSICAL HAZARDS

UNSTABLE (REACTIVE) UPON LOSS OF INHIBITOR

HEALTH HAZARDS

MAY CAUSE SKIN IRRITATION

MAY CAUSE ALLERGIC SKIN REACTION

PRECAUTIONARY MEASURES

DO NOT HANDLE NEAR HEAT, SPARKS, OR OPEN FLAME.

AVOID OXIDIZING AGENTS.

HAZARDOUS POLYMERIZATION MAY OCCUR UPON DEPLETION OF INHIBITOR.

USE ONLY WITH ADEQUATE VENTILATION/PERSONAL PROTECTION.

AVOID CONTACT WITH EYES, SKIN, AND CLOTHING.

AVOID BREATHING VAPORS/AEROSOLS.

KEEP CONTAINER CLOSED WHEN NOT IN USE.

WASH THOROUGHLY AFTER HANDLING.

BEFORE USING PRODUCT, READ MATERIAL SAFETY DATA SHEET (MSDS).

13. SUPPLEMENT

NPCA HMIS RATING

Health	2
Flammability	1
Reactivity	2
Personal protection**	D

**Respiratory protection may be necessary depending on conditions of use.
Refer to Section 8 of MSDS for information.

REGULATORY INFORMATION

TSCA STATUS:

TSCA status: All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

This material contains an inhibitor (HQ, MEHQ, etc.) at <1%. The type and amount meet product specifications. Contact a company representative for exact concentrations and details on inhibitor level maintenance.

*Note - qualifiers and codes used in this MSDS

EQ = Equal; AP = Approximately; LT = Less Than; GT = Greater Than;

TR = Trace; UK = Unknown; N/AP = Not Applicable; N/P = No Applicable Information Found; N/DA = No Data Available

14. DISCLAIMERS

Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product itself. The information in

Sartomer Company

Material Safety Data Sheet

Product: CN990
MSDS ID: S-000720

Revised Date: 07-29-2003
Replaces Date: 03-06-2000

this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable. This MSDS has been prepared in accordance with the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Sartomer Company

Material Safety Data Sheet

Product: CN973A80
MSDS ID: S-000263

Revised Date: 08-07-2003
Replaces Date: 03-06-2000

01. GENERAL INFORMATION

Sartomer Company, Inc.
Oaklands Corporate Center
502 Thomas Jones Way
Exton, Pennsylvania 19341

Emergency phone numbers:
800/424-9300 (CHEMTREC)
610/692-8401 (Sartomer Co., Inc.)
Product information:
610/363-4100

GENERIC NAME

RESIN/MONOMER BLEND

DOT PROPER SHIPPING NAME

NOT REGULATED

UN/NA NUMBER

N/AP

DOT HAZARD CLASS

NOT REGULATED

02. SUMMARY OF HAZARDS

WARNING

PHYSICAL HAZARDS: UNSTABLE (REACTIVE) UPON DEPLETION OF INHIBITOR

ACUTE HEALTH EFFECTS: SUSPECT SKIN IRRITATION HAZARD
(SHORT-TERM) SUSPECT SKIN SENSITIZATION HAZARD
SUSPECT EYE IRRITATION HAZARD
SUSPECT SKIN ABSORPTION HAZARD
SUSPECT RESPIRATORY TRACT IRRITATION HAZARD
NO EXPECTED INGESTION HAZARD

CHRONIC HEALTH EFFECTS: NO CHRONIC HEALTH EFFECTS DATA IS AVAILABLE FOR THIS
(LONG-TERM) MIXTURE. SEE SUPPLEMENT SECTION FOR DATA ON
COMPONENTS.

03. COMPONENTS

COMPONENT NAME	CAS NUMBER	% COMPOSITION BY (WT.)
AROMATIC URETHANE ACRYLATE	PROPRIETARY	AP 80
TRIPROPYLENE GLYCOL DIACRYLATE	42978-66-5	AP 20
ESTERS		

04. PHYSICAL AND CHEMICAL DATA

BOILING POINT	pH
N/DA	N/DA
FREEZING POINT	DRY POINT
N/DA	N/DA
SPECIFIC GRAVITY (H ₂ O=1 AT 39.2F)	VOLATILE CHARACTERISTICS
AP 1.09 AT 25C	NEGLIGIBLE
VISCOSITY UNITS, TEMP. (BROOK)	SOLUBILITY IN WATER
AP 6500 CPS AT 60C/140F	NEGLIGIBLE
VAPOR PRESSURE	STABILITY
NEGLIGIBLE	STABLE
VAPOR SP GR (AIR=1 AT 60 - 90F)	HAZARDOUS POLYMERIZATION

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N/DA MAY OCCUR
APPEARANCE AND ODOR
VISCOSUS LIQUID WITH A PUNGENT ODOR
CONDITIONS AND MATERIALS TO AVOID
HIGH TEMPERATURES, HEAT AND OPEN FLAME, OXIDIZING CONDITIONS, FREEZING
CONDITIONS, DIRECT SUNLIGHT, ULTRAVIOLET
RADIATION, INERT GAS BLANKETING
STRONG OXIDIZERS, FREE RADICAL INITIATORS, INERT
GASES, OXYGEN SCAVENGERS
HAZARDOUS DECOMPOSITION PRODUCTS
INCOMPLETE COMBUSTION MAY PRODUCE CARBON MONOXIDE, CARBON DIOXIDE AND PERHAPS
OTHER TOXIC VAPORS.

05. OCCUPATIONAL EXPOSURE LIMITS

SUBSTANCE	SOURCE	DATE	TYPE	VALUE	TIME
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NO ESTABLISHED STANDARDS

06. FIRE AND EXPLOSION

FLASH POINT	METHOD=(PMCC)	AUTOIGNITION TEMP.	METHOD=
GT 200F		N/AP	

FLAMMABLE LIMITS (% VOLUME IN AIR)
LOWER: N/AP UPPER: N/AP

FIRE AND EXPLOSION HAZARDS

HIGH TEMPERATURES/INHIBITOR DEPLETION/ACCIDENTAL IMPURITIES/EXPOSURE TO
RADIATION/OXIDIZERS MAY CAUSE SPONTANEOUS POLYMERIZING REACTION, GENERATING
HEAT/PRESSURE. CLOSED CONTAINERS MAY RUPTURE/EXPLODE DURING RUNAWAY
POLYMERIZATION.

EXTINGUISHING MEDIA

DRY CHEMICAL
CO₂
WATER SPRAY
FOAM
WATER FOG

SPECIAL FIREFIGHTING PROCEDURES

DO NOT ENTER FIRE AREA WITHOUT PROPER PROTECTION. SEE SECTION ON DECOMPO-
SITION PRODUCTS POSSIBLE. FIGHT FIRE FROM SAFE DISTANCE/PROTECTED LOCATION.
HEAT/IMPURITIES MAY INCREASE TEMPERATURE/BUILD PRESSURE/RUPTURE CLOSED
CONTAINERS, SPREADING FIRE, INCREASING RISK OF BURNS/INJURIES. WATER MAY BE
INEFFECTIVE IN FIREFIGHTING DUE TO LOW SOLUBILITY. USE WATER SPRAY/FOG FOR
COOLING. PRESSURE RELIEF SYSTEM MAY PLUG WITH SOLIDS, INCREASING RISK OF
OVERPRESSURE. NOTIFY AUTHORITIES IF LIQUID ENTERS SEWER/PUBLIC WATERS.

07. HEALTH HAZARDS

ROUTES OF EXPOSURE

INHALATION

INHALATION EXPOSURE IS NOT LIKELY AT STANDARD CONDITIONS DUE TO THE LOW
VOLATILITY OF THIS MATERIAL. HOWEVER, OVEREXPOSURE TO MISTS/AEROSOLS OR
VAPORS THAT MAY BE GENERATED AT ELEVATED PROCESSING TEMPERATURES MAY CAUSE
RESPIRATORY TRACT IRRITATION. SYMPTOMS OF IRRITATION MAY INCLUDE COUGH,

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MUCOUS PRODUCTION, SHORTNESS OF BREATH.

EYE CONTACT -- PRIMARY ROUTE

May cause moderate irritation with symptoms including burning sensation, tearing, redness or swelling.

SKIN ABSORPTION -- PRIMARY ROUTE

Exposure to this material can result in absorption through skin causing health hazard.

SKIN IRRITATION -- PRIMARY ROUTE

THIS PRODUCT MAY CAUSE SKIN IRRITATION AND BLISTERING -- THESE EFFECTS MAY BE DELAYED. PROLONGED OR REPEATED EXPOSURE MAY CAUSE A MORE SEVERE RESPONSE SUCH AS ULCERS AND SCARRING. REPEATED SKIN CONTACT MAY CAUSE SKIN SENSITIZATION (AN ALLERGIC SKIN REACTION).

INGESTION

No significant signs or symptoms indicative of any adverse health hazard are expected to occur as a result of ingestion.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

This material or its emissions may induce an allergic or sensitization reaction and thereby aggravate systemic disease.

08. PROTECTIVE EQUIPMENT / CONTROL MEASURES

RESPIRATORY PROTECTION

If this material is handled at elevated temperature or under mist forming conditions, NIOSH/MSHA approved respiratory protection equipment should be used.

EYE PROTECTION

Eye protection such as chemical splash goggles and/or face shield must be worn when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapor. Contact lenses should not be worn.

SKIN PROTECTION

When skin contact is possible, protective clothing including gloves, apron, sleeves, boots, head and face protection should be worn. This equipment must be cleaned thoroughly after each use.

ENGINEERING CONTROLS

IF HANDLING RESULTS IN MISTS/AEROSOLS/VAPORS, LOCAL EXHAUST VENTILATION IS RECOMMENDED.

OTHER HYGENIC PRACTICES

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

OTHER WORK PRACTICES

Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing/wash thoroughly before reuse. Shower after work using plenty of soap and water.

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09. EMERGENCY AND FIRST AID

INHALATION

If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.

EYE CONTACT

In case of eye contact, immediately rinse with clean water for 20-30 minutes. Retract eyelids often. Obtain emergency medical attention.

SKIN CONTACT

Immediately remove contaminated clothing. Wash skin thoroughly with mild soap/water. Flush w/lukewarm water for 15 minutes. If sticky, use waterless cleaner first. Seek medical attention if ill effect or irritation develops.

INGESTION

Ingestion unlikely. However, if ingested, obtain emergency medical attention.

EMERGENCY MEDICAL TREATMENT PROCEDURES

Remove clothing and rinse skin with water. Look for burns or signs of allergic reaction.

10. SPILL AND DISPOSAL

PRECAUTIONS IF MATERIAL IS SPILLED OR RELEASED

SPILLED OR RELEASED MATERIAL MAY POLYMERIZE AND RELEASE HEAT/GASES. EXTINGUISH ALL IGNITION SOURCES. BLANKET WITH FIREFIGHTING FOAM. IMPOUND/RECOVER LARGE LAND SPILL; SOAK UP SMALL SPILL WITH INERT SOLIDS. ON WATER, CONTAIN/MINIMIZE DISPERSION/COLLECT. REPORT PER REGULATORY REQUIREMENTS.

WASTE DISPOSAL METHODS

CONTAMINATED PRODUCT/SOIL/WATER MAY BE RCRA/OSHA HAZARDOUS WASTE DUE TO POTENTIAL FOR INTERNAL HEAT GENERATION (SEE 40 CFR 261 AND 29 CFR 1910). LANDFILL SOLIDS AT PERMITTED SITES. USE REGISTERED TRANSPORTERS. BURN CONCENTRATED LIQUIDS IN SYSTEMS THAT USE COMPATIBLE FUEL. DILUTE WITH CLEAN, LOW VISCOSITY FUEL. AVOID FLAMEOUTS. ASSURE EMISSIONS COMPLY WITH APPLICABLE REGULATIONS. DILUTE AQUEOUS WASTE MAY BIODEGRADE. AVOID OVERLOADING/POISONING PLANT BIOMASS. ASSURE EFFLUENT COMPLIES WITH APPLICABLE REGULATIONS.

11. ADDITIONAL PRECAUTIONS

HANDLING AND STORAGE PROCEDURES

Wear appropriate protective equipment when handling this material (See Section 8 of MSDS). Some acrylic oligomers and oligomer blends are viscous or extremely viscous and may require heating to facilitate handling. To facilitate product transfer from original container, product may be heated to 80C/176F for not more than 24 hours. Do NOT use localized heat sources such as band heaters to heat/melt product. Do NOT use steam. Hot boxes or hot rooms are recommended for heating/melting material. The hot box or hot room should be set at a maximum temperature of 80C/176F. Do not overheat--this may compromise product quality and/or result in an uncontrolled hazardous polymerization. If product freezes, heat as indicated above and mix gently to redistribute the inhibitor. Product should be consumed in its entirety after

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heating/melting--avoid multiple "re-heats" which may affect product quality or result in product degradation. Product is packaged with inhibitor(s). Unless inhibited, product can polymerize, raising temperature and pressure possibly rupturing container. Check inhibitor content periodically, adding to bulk material if needed. In addition, the product's inhibitor(s) require the presence of dissolved oxygen. Maintain, at a minimum, the original headspace in the product container and do not blanket or mix with oxygen-free gas as it renders inhibitor ineffective. Ensure air space (oxygen) is present during product heating/melting.

Store product indoors at temperatures greater than product's freezing point (or greater than 0C/32F if no freezing point available) and below 38C/100F. Avoid prolonged (longer than shelf-life) storage temperatures above 38C/100F. Store in tightly closed containers in a properly vented storage area away from: heat, sparks, open flame, strong oxidizers, radiation, and other initiators. Prevent contamination by foreign materials. Prevent moisture contact. Use only non-sparking tools and limit storage time. Unless specified elsewhere, shelf-life is 6 months from receipt.

DECONTAMINATION PROCEDURES

FOLLOW STANDARD PLANT PROCEDURES OR SUPERVISOR'S INSTRUCTIONS FOR DECONTAMINATION OPERATIONS.

12. LABEL INFORMATION

USE STATEMENT

FOR INDUSTRIAL USE ONLY

SIGNAL WORD

WARNING

PHYSICAL HAZARDS

UNSTABLE (REACTIVE) UPON LOSS OF INHIBITOR

HEALTH HAZARDS

MAY CAUSE SKIN, EYE AND RESPIRATORY TRACT IRRITATION

MAY CAUSE ALLERGIC SKIN REACTION

MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN

PRECAUTIONARY MEASURES

AVOID HEAT, HIGH TEMPERATURE, AND SHOCKS.

AVOID OXIDIZING AGENTS.

MATERIAL IS UNSTABLE AND HAZARDOUS POLYMERIZATION MAY OCCUR.

KEEP CONTAINER CLOSED WHEN NOT IN USE.

DO NOT HANDLE NEAR HEAT, SPARKS, OR OPEN FLAME.

AVOID CONTACT WITH EYES, SKIN, AND CLOTHING.

AVOID PROLONGED OR REPEATED CONTACT WITH SKIN.

AVOID PROLONGED OR REPEATED BREATHING OF VAPOR.

USE ONLY WITH ADEQUATE VENTILATION/PERSONAL PROTECTION.

DO NOT TASTE OR SWALLOW.

PREVENT CONTACT WITH FOOD, CHEWING, OR SMOKING MATERIALS.

WASH THOROUGHLY AFTER HANDLING.

13. SUPPLEMENT

NPCA HMIS RATING

HEALTH	2*
FLAMMABILITY	1
REACTIVITY	2

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PERSONAL PROTECTION** D

**RESPIRATORY PROTECTION MAY BE NECESSARY DEPENDING ON CONDITIONS OF USE.
REFER TO SECTION 8 OF THIS MSDS FOR RESPIRATORY PROTECTION GUIDELINES.

CHRONIC HEALTH EFFECTS INFORMATION

RESULTS FROM A MOUSE LYMPHOMA TEST WERE POSITIVE, INDICATING THAT TRIPROPYLENE GLYCOL DIACRYLATE, A COMPONENT OF THIS PRODUCT, MAY HAVE MUTAGENIC POTENTIAL. HOWEVER, AN AMES TEST FOR MUTAGENICITY WAS NEGATIVE, AND AN 80 WEEK STUDY IN MICE SHOWED NO INCREASED INCIDENCE OF SKIN OR VISCERAL TUMORS. THEREFORE, THERE IS REASON TO BELIEVE THAT THE MOUSE LYMPHOMA ASSAY IS A FALSE POSITIVE FINDING. IT SHOULD BE NOTED THAT THIS ASSAY SYSTEM PRODUCES A HIGH INCIDENCE OF FALSE RESPONSES.
TRIPROPYLENE GLYCOL DIACRYLATE WAS NOT FETOTOXIC OR TERATOGENIC WHEN ADMINISTERED ORALLY TO MICE AT A MATERNALLY TOXIC DOSE.

TSCA status: All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

THIS MATERIAL CONTAINS AN INHIBITOR (HQ, MEHQ, ETC.) AT <1%. THE TYPE AND AMOUNT MEET PRODUCT SPECIFICATIONS. CONTACT A COMPANY REPRESENTATIVE FOR EXACT CONCENTRATIONS AND DETAILS ON INHIBITOR LEVEL MAINTENANCE.
MAINTENANCE.

*Note - qualifiers and codes used in this MSDS
EQ = Equal; AP = Approximately; LT = Less Than; GT = Greater Than;
TR = Trace; UK = Unknown; N/AP = Not Applicable; N/P = No Applicable
Information Found; N/DA = No Data Available

14. DISCLAIMERS

Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product itself. The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable. This MSDS has been prepared in accordance with the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).